Applying Meta-Analytic Data Analysis to Examine the Impact of Simulations with Virtual Humans to Train Users to Identify, Approach and Refer Students in Psychological Distress Including Those At Risk for Suicide

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Objective: The American College Health Association has found that many students report difficulty in functioning due to feeling depressed (30%), overwhelming anxiety (50%) and anger (36%). Suicide is the second leading cause of death among US adolescents and over half of mental illnesses emerge prior to adulthood. Left untreated, mental illness can increase absenteeism, lower academic performance, disrupt classroom behaviors, and compromise school safety. Educators and students are well positioned to identify and refer students in psychological distress to support services, yet traditional gatekeeper programs focus on increasing knowledge, with little impact on referral behaviors. The objective of this study is to examine the effectiveness of five online interactive training simulations designed to teach users how to identify, speak with, and if necessary, refer students in psychological distress. The simulations were developed by Kognito (www.kognito.com) and are listed in Section III of the Suicide Prevention Resource Center’s Best Practices Registry. Two of the simulations are also in SAMHSA’s National Registry of Evidence-Based Programs and Practices.

Methods: A total of 12,410 middle and high school educators, college faculty, staff, and students completed one of five online training simulations where users practice role-play conversations with emotionally responsive virtual humans that react like real students exhibiting signs of psychological distress. Pre-training, post-training and three-month follow-up survey data was collected via the Gatekeeper Behavior Scale that measured users’ preparedness, likelihood (or behavioral intent), and self-efficacy in initiating and managing such conversations. Measures of gatekeeper behaviors included the number of students in psychological distress that users reported to have identified, approached, and referred pre-training compared to follow-up. All data was meta-analyzed to yield effect sizes.

Results: Composite effect size for pre- and post-training measures of preparedness, likelihood and, self-efficacy to engage in gatekeeper behaviors was large, at 0.72. Effect sizes comparing pre- to follow-up for preparedness was 0.70, likelihood 0.35 and self-efficacy 0.42. Changes in composite gatekeeper behaviors including increases in the number of distressed students identified, approached and referred to support services was 0.21.

Conclusions: Data supports the use of role-play conversation with virtual humans to train users to engage in gatekeeper helping behaviors to augment student mental health initiatives. This training modality, coupled with the benefits of online delivery, holds tremendous potential to reach large numbers of geographically dispersed populations. Additionally, this learning approach has potential to support a wide range of public health initiatives.